Sidewinder Platinum v 1.0

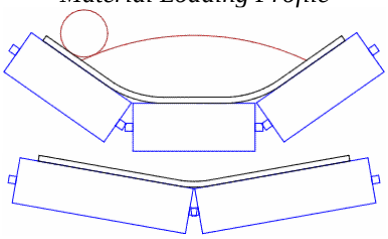
Project	Conveyor Project
Conveyor	CV-Example
Location	Conveyor Location
Client	Company ABC

Company	Company ABC	Description: 900 m Overland Conveyor
Designer	AC-Tek	
Date	7/22/2005	Comments: 3200 T/H running at 4 m/s
Filename	cv206_2drv.swi	

Material Input Data

Type.....Iron Ore, crushed
Tonnage.....3200 TPH
Density.....2200 kg/m^3
Maximum lump size.....150 mm
Surcharge angle.....25 deg
Percent lumps.....10%

Material Loading Profile



%CEMA area.....73 %
%Total area.....52 %
Edge distance.....136 mm
Bed depth.....196 mm

Belting Input Data

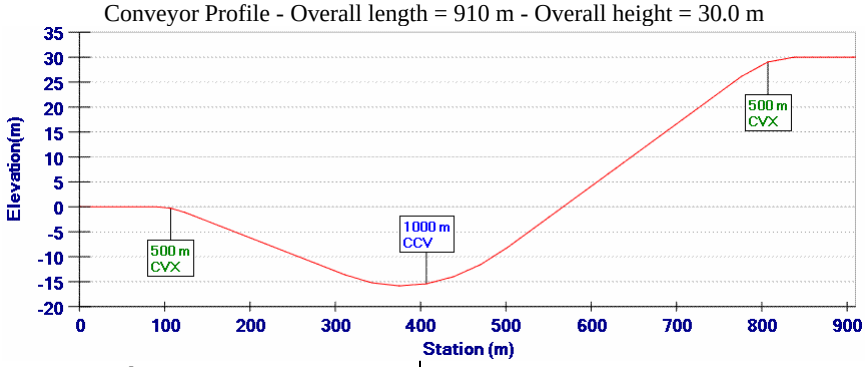
Type.....Steel Cord
Width.....1050 mm
Speed.....4.00 m/s
Rating.....1200 N/mm
Top cover thickness.....8 mm
Bottom cover thickness.....5 mm
Total thickness.....19 mm
Mass.....26.9 kg/m
Elastic modulus.....86,400 kN/m
Tape Length.....1,929 m

Idler Set Input Data

	Carry	Return
Type	Equal Roll	VEE
Roll diameter (mm)	152	152
Trough Angle (deg)	35	10
Number of rolls	3	2
Series name	6305	6205
Total drag (N)	8.3	5.5
Roll length (mm)	389	588
Shaft diameter (mm)	25	25
Rotating mass (kg)	20.6	19.6
Idler spacing (m)	1.00	2.00
in convex curves	1.00	2.00
in concave curves	1.00	2.00
Number of Idler Sets	913	0
Roll RPM	505	0
Min life (1000 Hr)	268	
95% life [1] (1000 Hr)	320	

[1] *L_{10} life above which 95% of idlers exceed*

Conveyor Profile - Overall length = 910 m - Overall height = 30.0 m



Take-up Input Data

Type.....Gravity
Location.....Tail
Tension.....60 kN
Req'd steady state tension.....41 kN
Req'd momentary tension.....41 kN
Req'd tension for sag.....65 kN
Max pulley force.....120 kN
Running disp.....-0.01 to 0.47 m
Momentary disp.....-0.35 to 0.59 m

Take-up Displacement Summary (m)

Total displacement(incl thermal).....0.94 m
Permanente elongation.....0.96 m
Splice length (2 included).....2.10 m
Clearance.....1.00 m
Required displacement.....5.00 m

Maximum Belt Tensions

	Tension (kN)	Safety Factor
Steady State	191	6.59
Momentary	224	5.61

Minimum Belt Tensions

	Tension (kN)	Sag (%)
Steady State	44	0.68
Momentary	10	2.94

Stating and Stopping

Start control.....Fixed time
Start time.....60.0 sec
O-Stop control.....Fixed time
O-Stop time.....30.0 sec
E-Stop control.....Drift
E-Stop time.....7.8 to 80.5 sec
E-Stop distance.....15.6 to 160.9 m

Motor Input Data

Type.....VFD
Total number of motors.....2
Nameplate rating.....350 kW
Total installed power.....700 kW
Synchronous speed.....1500 RPM
Reducer ratio.....19.53
Drive inertia.....6 kg-m^2
Flywheel inertia.....15 kg-m^2
Total inertia.....20 kg-m^2
Maximum starting torque.....135%
Efficiency.....93 to 98%
Pulley lagging type.....rubber
Backstop Required.....Yes

Demand Power (kW)

Case	Demand Power (kW)	% Name plate
Empty - Normal	74	11
Fully Loaded - Normal	516	74
Fully Loaded - Low	467	67
Fully Loaded - High	555	79
All Inclines + Flat Sections - High	644	92
Declines Only - Low	-41	-6

Din Factor and Equivalent Mass

Case	Din Factor	Belt Line Mass (kg)
Empty - Normal	0.0119	148,624
Fully Loaded - Normal	0.0164	351,536
Fully Loaded - Low	0.0146	339,385
Fully Loaded - High	0.0182	353,966
All Inclines + Flat Sections - High	0.0174	290,591
Declines Only - Low	0.0125	199,849

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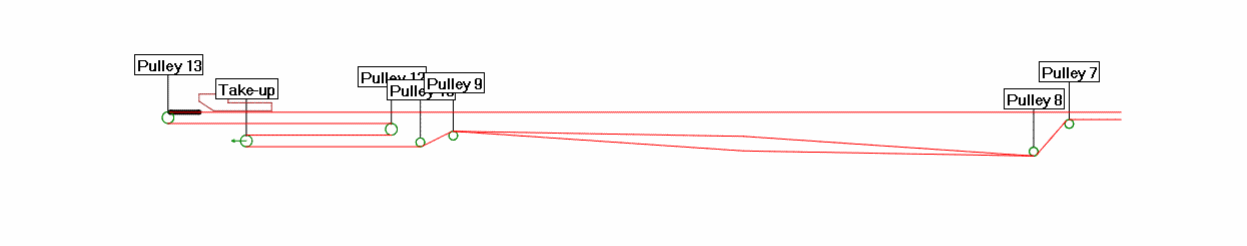
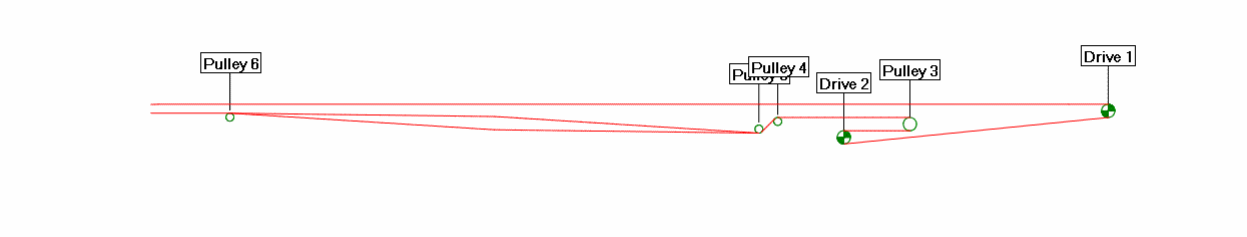
Pulleys at Tail



Pulleys at Head



Maximum Pulley Tensions

Pulley	Location (Element)	Type	Wrap (deg)	Maximum Resultant Tension (kN)		Maximum Belt Line Tension (kN)	
				Running	Momentary	Running	Momentary
Drive 1	Head (17)	1	174	317	366	191	224
Drive 2	Head (19)	1	186	188	226	126	141
Pulley 3	Head (21)	1	-180	126	169	63	85
Pulley 4	Head (23)	3	-45	48	65	63	84
Pulley 5	Head (25)	3	47	50	67	63	84
Pulley 6	Head (27)	3	-2	2	3	63	84
Pulley 7	Tail (43)	3	-49	50	51	60	61
Pulley 8	Tail (45)	3	51	52	53	60	61
Pulley 9	Tail (47)	3	-29	30	30	60	61
Pulley 10	Tail (49)	3	27	28	28	60	60
Take-up	Tail (51)	2	180	120	120	60	60
Pulley 12	Tail (53)	2	-180	121	121	61	61
Pulley 13	Tail (55)	2	180	121	122	61	61

Pulley Geometry Details

Type	Diameter (mm)	Lagging type	Lagging thickness	Diameter with lagging (mm)	Face width (mm)
1	1000		0	1000	
2	800		0	800	
3	600		0	600	

Turnover Summary

Head Turnover

Location: Station 884 m (at element 26)
Type: Simple helix with support rolls at quater points
Length: 40 m

	Min Tension (kN)	Min Stress (N/mm)	Max Sag (mm)	Max Sag %	Max Tension (kN)	Max Stress (N/mm)	Cable Safety Factor
Running	62	16	125	0.3	62	182	6.61
Momentary	44	-6	140	0.4	84	193	6.22

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Tail Turnover

Location: Station 60 m (at element 46)
Type: Simple helix with support rolls at quater points
Length: 40 m

	Min Tension (kN)	Min Stress (N/mm)	Max Sag (mm)	Max Sag %	Max Tension (kN)	Max Stress (N/mm)	Cable Safety Factor
Running	59	13	127	0.3	59	180	6.65
Momentary	40	-12	145	0.4	60	181	6.64

Vertical Curve Summary

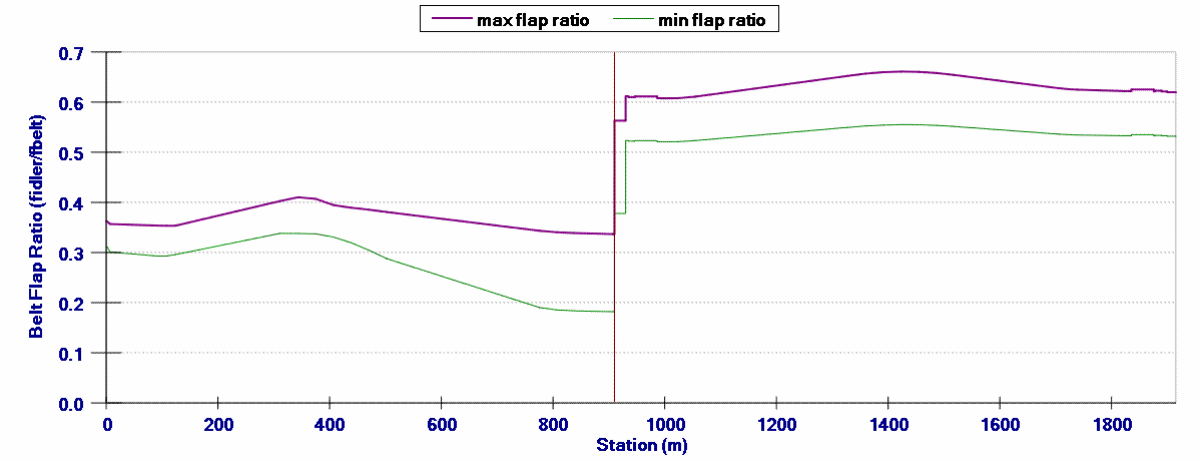
Summary of Vertical Curve on Carry Strand

Elements	Station	Type	Radius	Running Tensions		Momentary Tensions	
				Reqd Radius	Reason	Reqd Radius	Reason
3-5	90 - 124	convex	500	91	Min stress	102	Min stress
6-12	311 - 502	concave	-1000	-424	Liftoff	-517	Min stress
13-15	776 - 838	convex	500	410	Max stress	485	Max stress

Summary of Vertical Curve on Return Strand

Elements	Station	Type	Radius	Running Tensions		Momentary Tensions	
				Reqd Radius	Reason	Reqd Radius	Reason
39-41	90 - 124	convex	500	0		0	
32-38	311 - 502	concave	-1000	-345	Liftoff	-385	Liftoff
30-31	776 - 807	convex	500	0		0	

Belt Flap Summary Plot



* Belt flap resonance occurs at flap modes 1, 2, 3, and 4

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Belt Tension Summary Plot